LISTING OF THE CLAIMS:

1. (Cancelled).

2. (Previously Presented) A nucleic acid molecule comprising at least a first signal sequence and a second signal sequence and a recombinase gene operably linked to an expression control sequence, said first and second signal sequences being positioned to mediate inversion of a sufficient portion of either the recombinase gene or the expression control sequence to inactivate or decrease recombinase activity when the first and second signal sequences are contacted with a recombinase, thereby decreasing or eliminating recombinase-mediated toxicity.

3. (Previously Presented) The nucleic acid molecule of claim 2, wherein said nucleic acid molecule is included in a retroviral vector and said signal sequence is inserted into a retroviral long terminal repeat of said vector.

4. (Previously Presented) The nucleic acid molecule of claim 3, wherein said signal sequence is inserted into the U3 region of the 3' retroviral long terminal repeat of said vector.

5. (Previously Presented) The nucleic acid molecule of claim 2, wherein said recombinase is selected from the group consisting of a *cre* recombinase and a Flp recombinase and the signal sequence is selected from the group consisting of lox sequences and FRT sequences.

6. (Cancelled).

7. (Previously Presented) The nucleic acid molecule of claim 2, wherein said signal sequences flank said recombinase gene or said expression control sequence of said recombinase gene.

8. (Previously Presented) An isolated cell comprising the nucleic acid molecule of claim 2.

9. (Previously Presented) The isolated cell of claim 8, further comprising a second nucleic acid molecule comprising a target gene and signal sequences recognized by said recombinase.

10. (Previously Presented) The isolated cell of claim 9, wherein said recombinase, when expressed in said cell, inverts a sequence in said second nucleic acid molecule that is located between said signal sequences in said second nucleic acid molecule, and the inversion results in modulation of expression of said target gene.

11. (Previously Presented) The isolated cell of claim 10, wherein said signal sequences in said second nucleic acid molecule are in inverted orientation with respect to one another.

12. (Previously Presented) The isolated cell of claim 11, wherein said signal sequences in said second nucleic acid molecule flank said target gene, so that expression of said recombinase results in inversion of said target gene, and inactivation of expression of said target gene.

13. (Previously Presented) The isolated cell of claim 11, wherein said signal sequences in said second nucleic acid molecule flank a positive regulatory element of said target gene, so that expression of said recombinase results in inversion of said positive regulatory element, and inactivation of expression of said target gene.

14. (Previously Presented) A isolated cell comprising two nucleic acid molecules, wherein the first nucleic acid molecule comprises a recombinase gene operably linked to an expression control sequence and signal sequences recognized by a recombinase and the second nucleic acid molecule comprises a target gene and signal sequences recognized by a recombinase, wherein said signal sequences in said second nucleic acid molecule flank a negative regulatory element of said target gene, so that expression of said recombinase results in excision of said negative regulatory element, and activation of expression of said target gene.

15. (Previously Presented) A isolated cell comprising two nucleic acid molecules, wherein the first nucleic acid molecule comprises a recombinase gene operably linked to an expression control sequence and signal sequences recognized by a recombinase and the second nucleic acid molecule comprises a target gene and signal sequences recognized by a recombinase, wherein said signal sequences in said second nucleic acid molecule are in an inverted orientation with respect to one another.

16. (Previously Presented) The isolated cell of claim 15, wherein said signal sequences in said second nucleic acid molecule flank an inverted positive regulatory element of said target gene or an inverted coding region of said target gene, so that expression of said recombinase results in inversion of said inverted positive regulatory element or inversion of said inverted coding region, and activation of expression of said target gene.

17. (Previously Presented) The isolated cell of claim 15, wherein said signal sequences in said second nucleic acid molecule flank an inverted negative regulatory element of said target gene or a coding region of said target gene, so that expression of said recombinase results in inversion of said inverted negative regulatory element or inversion of said coding region, and inactivation of expression of said target gene.

18. (Previously Presented) The isolated cell of claim 8, wherein said signal sequences in said nucleic acid molecule comprising said sequence encoding said recombinase flank said nucleic acid sequence encoding said recombinase.

19. (Previously Presented) The isolated cell of claim 8, wherein said signal sequences in said nucleic acid molecule comprising said sequence encoding said recombinase flank a positive regulatory element of said nucleic acid sequence encoding recombinase.

20. (Previously Presented) The isolated cell of claim 9, wherein said nucleic acid molecule comprising said sequence encoding said recombinase and said second nucleic molecule are present in the same vector.

21. (Previously Presented) A isolated cell comprising two nucleic acid molecules, wherein the first nucleic acid molecule, comprising a recombinase gene operably linked to an expression control sequence and signal sequences recognized by a recombinase and the second nucleic acid molecule, comprising a target gene and signal sequences recognized by a recombinase, are present in separate vectors.

22-50. (Cancelled).

51. (Previously Presented) The nucleic acid molecule of claim 2, wherein said signal sequences are in inverted orientation with respect to one another.